IN THE CLAIMS:

Please amend Claims 1 and 15, as follows.

1. (Currently amended) An optical waveguide device comprising:

a slab-type optical waveguide layer; and

a plurality of chips which include optical input and output ports for inputting and outputting an optical signal to and from the slab-type optical waveguide layer, wherein an optical input port receives an optical signal, output by an optical output port, from the slab-type optical waveguide layer in accordance with a timing control signal inputted using an electrical connection between the plurality of chips,

wherein the timing control signal is an electrical signal obtained by dividing a clock frequency for the optical signal.

2. (Cancelled)

3. (Previously Presented) An optical waveguide device according to claim 1, wherein the optical input and output ports each comprise an optical element for receiving or emitting light in a direction nearly perpendicular to an optical waveguide direction in the optical waveguide layer, and optical path changing means provided in a desired position within the optical waveguide layer in correspondence to the optical element.

4. (Previously Presented) An optical waveguide device according to claim 3, wherein the optical path changing means is comprised of a optical reflector having a projection portion, the optical element comprises a surface type element mounted to the optical waveguide layer in a state in which its central portion is aligned with the position of a vertex of the projection portion of the optical reflector, and each of the optical elements transmits and receives a signal to and from the whole area within the optical waveguide layer.

5. (Previously Presented) An optical waveguide device according to claim 3, wherein the optical path changing means comprises an optical reflector having a projection portion, and wherein the optical element comprises a surface type element mounted to the optical waveguide layer in a state in which its central portion is aligned with a position of the vertex of the projection portion of the optical reflector, and the optical element transmits and receives a signal to and from only a partial area within the optical waveguide layer.

6. (Previously Presented) An optical waveguide device according to claim 1, wherein the optical waveguide layer is formed by laminating a plurality of layers.

7. (Previously Presented) An optical waveguide device according claim 1, wherein an optical signal originated from the side of an optical output port comprises a packet signal train formed of a finite pulse train, and wherein the timing control signal is individually sent as an instruction signal used to select adoption or rejection of the packet signal to the side of

the optical input port to carry out time division packet switching to thereby switch an optical connection between the optical input and output ports.

8. (Previously Presented) A device combining optical and electrical elements comprising electrical circuits, the plurality of chips for operating the electrical circuits, and the optical waveguide device according to claim 1, wherein a signal connection between the electrical chips is carried out using both an optical connection using the optical signal, and an electrical connection using at least the timing control signal used to control transmission and reception of the optical signal.

9. (Previously Presented) A device combining optical and electrical elements according to claim 8, wherein the optical input and output ports and the electrical chips are electrically connected to each other.

10. (Previously Presented) A device combining optical and electrical elements according to claim 8, wherein a part of or all of the electrical connection between the electrical chips is carried out using an electrical wiring formed on a surface of the optical waveguide layer, or an electrical wiring formed on an electrical circuit substrate including the electrical circuits.

11. (Previously Presented) A device combining optical and electrical elements according to claim 8, wherein a plurality of slab-type optical waveguide layers constituting the optical waveguide layer are provided with optical input and output ports from the same electrical chip.

12. (Previously Presented) A device combining optical and electrical elements according to claim 8, wherein a plurality of connection terminals for surface mounting to other electrical circuit substrates are arranged on a surface of an electrical circuit substrate including the electrical circuits, and wherein the device takes a form of a chip size package.

13. (Previously Presented) A method of driving a device combining optical and electrical elements according to claim 8, comprising the steps of:

forming the optical signal transmitted from the side of the optical output port from a packet signal train formed of a finite pulse train;

individually transmitting the timing control signal as an instruction signal used to select adoption or rejection of a packet signal to the side of the optical input port to carry out time division packet switching to thereby switch an optical connection between the optical input and output ports;

transmitting an electrical signal used to select adoption or rejection of the packet signal with a clock frequency depending on a repetitive period of a packet train from an electrical chip for transmission; and

receiving an electrical signal pulse used to select adoption or rejection of the packet signal at a timing earlier than a packet train selected in an electrical chip for reception to start capturing the packet signal at a timing of fall of the electrical signal pulse.

14. (Previously Presented) A method of driving a device combining optical and electrical elements according to claim 8, comprising the steps of:

forming an optical signal transmitted from the side of the optical output port from a packet signal train formed of a finite pulse train;

individually transmitting the timing control signal as an instruction signal used to select adoption or rejection of the packet signal to the side of the optical input port to carry out time division packet switching to thereby switch an optical connection between the optical input and output ports;

storing control patterns for the packet switching in a memory provided inside or outside the optical and electrical elements combined device; and

successively reading out the control patterns from the memory to control an operation of the device combining optical and electrical elements.

15. (Currently Amended) A method of driving a device combining optical and electrical elements according to claim 13, wherein the electrical chip for transmission and the electrical chip for reception are successively changed in a time division manner ~~if necessary~~.

16. (Previously Presented) A method of driving a device combining optical and electrical elements according to claim 13 or 14, wherein when optical signals are transmitted at the same time within the same optical waveguide layer from a plurality of electrical chips, light intensities of the optical signals from the plurality of electrical chips are made different from one another.

17. (Previously Presented) A method of driving a device combining optical and electrical elements according to claim 14, wherein the control patterns for the packet switching are rewritable by being downloaded from the outside of the device combining optical and electrical elements, and the operation of the device combining optical and electrical elements is switched concurrently with the download.

18. (Previously Presented) An electronic device embedded in the device combining optical and electrical elements as claimed in any one of claims 9 to 12 for enabling a high-speed optical connection between electrical chip to be freely reconfigured, the device being so constructed that connections among a plurality of embedded systems can be switched at a high speed with one device.